

## **SWITCHING METHOD IN A MULTI-THREADED PROCESSOR**

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### **ABSTRACT OF THE DISCLOSURE**

A processor includes logic for attaining a very fast exception handling  
5 functionality while executing non-threaded programs by invoking a multithreaded-  
type functionality in response to an exception condition. The processor, while  
operating in multithreaded conditions or while executing non-threaded programs,  
progresses through multiple machine states during execution. The very fast exception  
handling logic includes connection of an exception signal line to thread select logic,  
10 causing an exception signal to evoke a switch in thread and machine state. The switch  
in thread and machine state causes the processor to enter and to exit the exception  
handler immediately, without waiting to drain the pipeline or queues and without the  
inherent timing penalty of the operating system's software saving and restoring of  
registers.